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ABSTRACT

In order to accumulate data on foreign medical students in the Americas, medical schools of the member countries of the Pan American Health Organization region of the World Health Organization were surveyed to acquire data on their student enrollments by country of origin, sex, and year of study for the 1971-72 academic year. A tabular questionnaire was designed in which total enrollment for each school could be recorded by sex, nationality, and year of study. The response rate to the survey questionnaire was 97.2%. Results of the survey encompass an overview of medical students in the Americas; U.S. citizens studying medicine in other countries of the Americas; U.S.-born medical students in Mexico; foreign medical students in selected countries of the Americas; and foreign medical students in the United States. (MJM)

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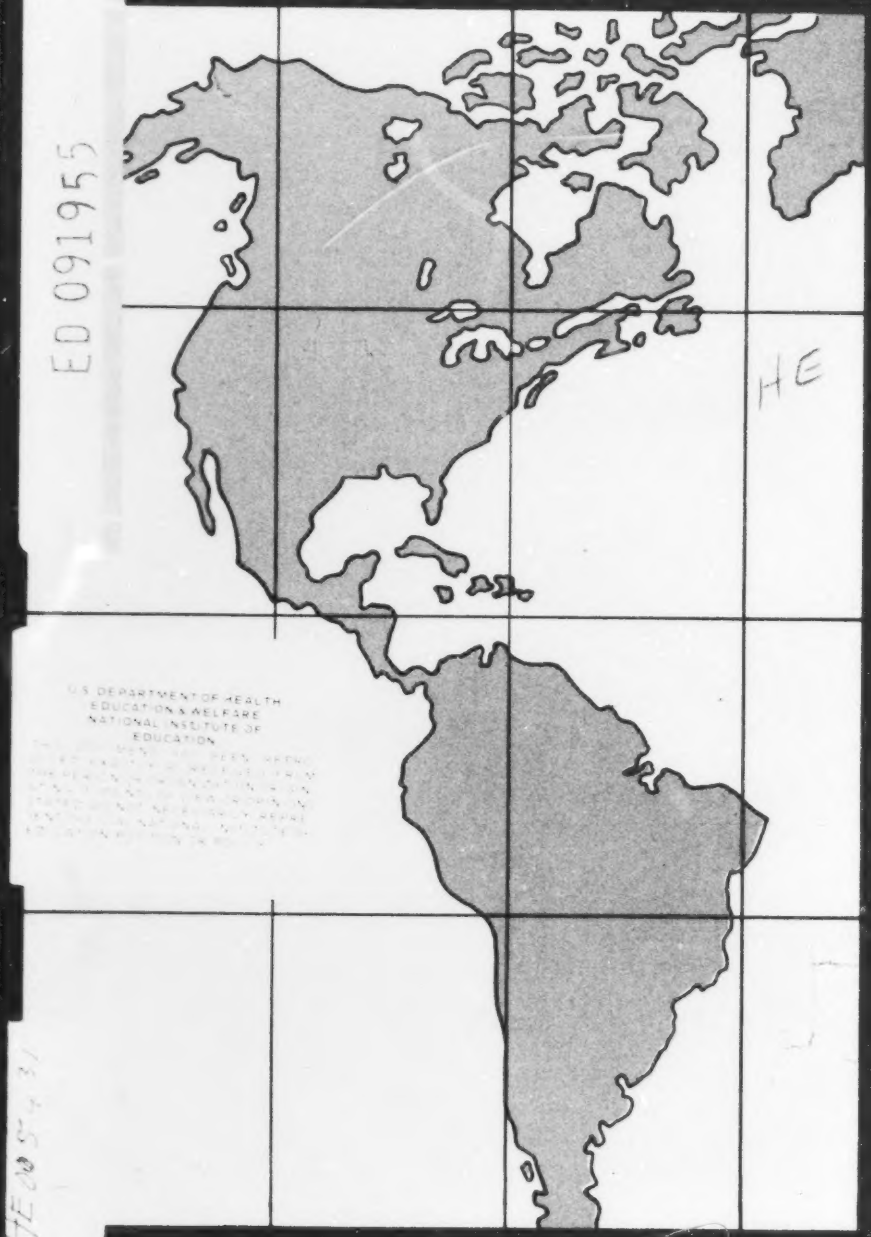

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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DHEW PUBLICATION NO. (HRA) 74-27

# FOREIGN MEDICAL STUDENTS IN THE AMERICAS: 1971-72

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH RESOURCES ADMINISTRATION

# FOREIGN MEDICAL STUDENTS IN THE AMERICAS: 1971-72

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Resources Administration

Bureau of Health Resources Development
Division of Manpower Intelligence
Office of International Health Manpower Studies

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# PREFACE

This Report is an analysis of data collected by the Pan American Health Organization (PAHO) for the Division of Manpower Intelligence (DMI), Bureau of Health Resources Development (BHRD), Health Resources Administration (HRA) under Contract No. NIH 72-4305. The contract was awarded in support of a joint project developed by the Office of International Health Manpower Studies (OIHMS) of DMI and the Human Resources Division of PAHO. Additional analysis of the data will be done by PAHO with special attention to students and schools of Latin America. The original paper was prepared by Betty A. Lockett, Ph.D., Chief of the OIHMS, for presentation to the Student Aspects of International Education Group at the 84th Annual Meeting of the Association of American Medical Colleges, November 7, 1973. Frances Sullentrop and Kathleen Williams, staff of the OIHMS, assisted in the verification and tabulation of the data presented and in preparation of the final report.

W A Lybrand

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Director,
Division of Manpower Intelligence

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# BACKGROUND

## Interest in Foreign Medical Students

An apparent increase in the number of U.S. citizens studying medicine abroad has received attention in recent years (1-3). A rise in the number of applicants to U.S. medical schools which has far exceeded their enrollment capabilities is seen as a major contributing factor to this exodus of students to other countries (4). The number of applicants rejected by U.S. medical schools grew from 5,700 in 1962 to 16,800 in 1972 (5). This expanding number of rejected applicants and the possibility of transfer to a U.S. school after two years of medical study abroad are obvious reasons why U.S. citizens are migrating to other nations for their basic medical education (6-8). There may be other reasons as well. Living and tuition costs may be lower in other countries. Admission policies are not as restrictive in some countries as they are in the United States. Thus, those countries become a haven for would-be physicians who are not able to compete with other applicants meeting medical school admission criteria more exactly, e.g., higher grade point averages and MCAT scores.

Whatever the reasons may be for U.S.-born medical students in other countries, serious questions have arisen about the consequences of their education abroad. It is true that most of these migrating students are obtaining a medical education not available to them at home. However, due to differences in curriculum and educational objectives in the various countries, the appropriateness and relevance of medical training abroad for U.S. practice is often a matter open to discussion.

The students who go to another country broaden their knowledge of the world in general, another culture in particular, and perhaps disease processes not common to the United States, but they also face a number of difficulties which may outweigh those advantages. The study of medicine in a language and a cultural setting very different from that in the home country can impair the educational experience or prove altogether too much for some students. Also, when students do graduate and return to the United States, they confront licensing and credentialing problems which they would not have incurred had they studied at home.

Regardless of the issue of beneficial or deleterious consequences, Federally guaranteed educational loans are available through private lending agencies to U.S. citizens studying in selected universities in foreign countries. The loans are provided for under the Higher Education Act as amended by P.L. 92-318. The program is administered through the Office of Education, which has compiled a list of approved schools. No data are available on the number of students who take advantage of these loans by field of study, although information by school is obtainable. For example, 1,427 loans have been provided to U.S. citizens at the Autonomous University of Guadalajara School of Medicine in Mexico in the last three years (278 in FY 1970, 500 in FY 1971, and 649 in FY 1972). The total dollar amount was about $1.8 million.

In addition, P.L. 92-157 authorizes the Secretary of Health, Education, and Welfare to make loans to U.S. citizens who are full-time students in schools of medicine located outside the United States. At the present time, funds for this legislation have not been appropriated. The law requires that (1) the student has applied for admission to a school of medicine located in the United States; (2) he has, in connection with that application, undergone a written examination to determine his qualifications for admission as a student in such a school; and (3) the student furnish the Secretary certification from the school to which he has applied which states that he is qualified for admission and that he was denied admission solely because the number of qualified applicants exceeded the maximum number of openings for that year.

This legislation has a number of problems, and it is not likely to be implemented until they are resolved. For example, many U.S. medical schools might hesitate to certify that they had found an applicant acceptable but had denied him admission solely because of an excess number of applicants. The institution might be vulnerable to lawsuits on the basis of illegal discrimination, as in the recent Emery *vs.* State of Colorado decision (9). Furthermore, without a valid, up-do-date estimate of the numbers of these medical students abroad, it will be difficult to determine a suitable appropriation level.

## Need for Improved Data

In the past, the number of U.S. citizens studying medicine abroad has been estimated to be between 3,000 and 4,000 (10-11). Such estimates have been based on visits to European schools where U.S. students were known to be concentrated and on the number of U.S.-born foreign medical graduates (FMGs) who sat for the Educational Council for Foreign Medical Graduates (ECFMG) examination in a given year. Although these estimates have been useful for other purposes, determination of a suitable funding level for the educational loan appropriation and, more important, other health manpower program and planning purposes requires a more accurate census of those students, at the very least by sex and year of study.

Although the Institute of International Education (IIE) collects and publishes data on U.S. students abroad and foreign students in the United States, no accurate basic data have been available specifically on medical students. There are several reasons for this. First, the IIE survey classifies students of higher education in nine broad fields of study, and medical students are included in the category of medical sciences. This category comprises undergraduate and graduate students in courses of study such as public health, nursing, dentistry, midwifery, and veterinary medicine. It is not possible to determine how many of these students are attending medical schools *per se*. Second, the survey polls only those institutions listed in *World of Learning, International Handbook of Universities, Commonwealth Universities Yearbook*, and *Handbook on International Study*. The World Health Organization's (WHO) *World Directory of Medical Schools* is not utilized. Thus, medical schools are polled only if they are affiliated with an institution listed in the above publications. Finally, the IIE response rates from the institutions which are surveyed have been considerably lower than would be considered adequate for an accurate census (e.g., 60 percent in 1969; 59 percent in 1972).

Since the IIE data were inappropriate, the need to survey the medical schools of the world *directly* in order to collect accurate basic data on U.S.-born medical students abroad was recognized. A survey conducted by an international organization such as WHO or UNESCO was expected to produce a higher response rate than a survey conducted by a private organization located in the United States. After consultation with WHO and the Pan American Health Organization (PAHO) representatives, it was decided that a pilot study should be conducted in the PAHO region of WHO in order to determine the feasibility of such a study on a worldwide basis.

Over the years, PAHO has made special efforts to keep basic statistics up-to-date for Latin America for the purpose of health planning. Basic data on medical education collected by PAHO had not included information on foreign medical students, however. Thus, PAHO had an interest in collecting informtion on all foreign students in the Americas which could be done simultaneously with data collection on U.S. citizens. International organizations such as PAHO and WHO require an adequate information base on these foreign students in order to address the issues raised by the movement of medical students and migration of health manpower. The current international information base is inadequate in this area, as recognized by the planned study of health manpower migration mandated by the 25th World Health Assembly.

A pilot study, therefore, was developed, to be jointly funded and conducted by the Office of International Health Manpower Studies (OIHMS) in the Division of Manpower Intelligence (DMI) of the Bureau of Health Resources Development (BHRD) and the Human Resources Division of PAHO. Medical schools of the member countries of the PAHO region of WHO were surveyed to acquire data on their student enrollments by country of origin, sex, and year of study for the 1971-72 academic year. The study was initiated in August 1972 and the survey was completed in July 1973.

## SURVEY METHODOLOGY

### Study Plan

In order to conduct the study, a tabular questionnaire was designed on which total enrollment for each school could be recorded by sex, nationality, and year of study. This questionnaire was sent to each school included in the survey or, in some countries, to the appropriate association of medical schools or government agency. In addition, PAHO zone chiefs and country representatives received copies of the questionnaire along with an explanatory letter requesting their assistance in obtaining responses from the various schools. PAHO officials were also asked to seek the support of the executive directors of the associations of Faculties of Medicine who had been responsible for promoting improvements in student records systems in the various countries.

Approximately three weeks after the questionnaire had been mailed, follow-up requests to the nonrespondent schools were made – first by telegram, then by telephone. Finally, in some cases, if no reply was forthcoming, a visit to the school was made by the PAHO consultant responsible for the project.

## Definition of Terms

The universe for the survey was defined as all schools in the PAHO member countries to be listed in the WHO *World Directory of Medical Schools 1970*. A preliminary list of those schools was provided by WHO.

For purposes of clarity and uniformity, certain terms were defined for this study.

Definitions:

A *medical student* is any person enrolled (in one of the schools surveyed) in a program of study which leads to a doctor of medicine degree, or its equivalent such as Licenciado en Medicina, Medico, or Medico-Cirujano. In this survey, students at the Autonomous University of Guadalajara in Mexico are classified as regular and irregular. A regular student is defined as one who has full academic standing and is pursuing a course of study on a full-time basis. An irregular student is either repeating a course or courses or is in a conditional or incomplete status. In 1967, approximately 25 percent of the students in Latin America were reported to be irregular (12, p. 195).

A *foreign medical student* is any student enrolled in the program described above who is classified by the schools surveyed as a noncitizen of the country in which the school is located. This would include persons who remain in that country on an immigrant visa.

The University of West Indies in Jamaica receives financial support from Antigua, the Bahamas, Barbados, Belize, the British Virgin Islands, Dominica, Grenada, Jamaica, Montserrat, St. Kitts-Nevis-Anguilla, St. Lucia, St. Vincent, and Trinidad and Tobago. Students from these countries are not classified as foreign students by the University.

Students from Puerto Rico are reported in two ways by respondents to the survey, as a result of Puerto Rico's relationship to the United States. Puerto Rico is a self-governing commonwealth in union with the United States, and its citizens are citizens of the United States. They are not, therefore, classified as foreign students in medical schools on the U.S. mainland. Respondents from all other countries in the Americas report Puerto Rican students separately from mainland U.S. citizens, and consider them citizens of Puerto Rico.

*Country of origin* is defined as country of citizenship, and is distinguished from country of birth, country of last permanent residence, or country of last address.

*Year of study* refers to the classification of the students by years of enrollment in the medical degree program. The number of years of study necessary to complete the requirements for the doctor of medicine degree varies from three to six years in the medical schools of the Americas. Most schools in North America require four years of study although there are a few three-year programs. Most schools of Latin America require six years of study, but these six years include two years of basic science which is regarded as premedical education in the United States and Canada. Students who were irregular students were not classified by year of study in the survey.

## Problems Encountered and the Survey Response Rate

The mailed questionnaire was followed up with telegrams and telephone calls. Even after these two follow-up procedures had been implemented, some schools in Mexico, Ecuador, Colombia, Peru, Brazil, Chile, and Cuba had not responded. The major problem contributing to the nonresponse from those schools was the absence of adequate information on student enrollment in the individual schools. Additional efforts including personal visits to the schools were made by the PAHO representative in those countries which had nonrespondents. In one instance, the PAHO consultant for the survey visited the school and supervised the tabulation of the data herself. As an end result, responses were received from 274 of the 282 schools included in the survey universe (Table 1). The only nonrespondents were three schools in Cuba, two in Mexico, two in Bolivia, and one in Chile. The response rate to the survey questionniare was 97.2 percent, an exceptionally high reply rate.

Table 1
NUMBER OF MEDICAL SCHOOLS IN THE AMERICAS SURVEYED AND NUMBER RESPONDING, BY COUNTRY: 1971-72 academic year

| Country | Number of medical schools surveyed | Number of medical schools responding |
|---|---|---|
| Total in the Americas | 282 | 274 |
| Canada | 16 | 16 |
| United States [1] | 108 | 108 |
| Argentina | 9 | 9 |
| Bolivia | 3 | 1 |
| Brazil | 73 | 73 |
| Chile | 5 | 4 |
| Colombia | 9 | 9 |
| Costa Rica | 1 | 1 |
| Cuba | 3 | 0 |
| Dominican Republic | 2 | 2 |
| Ecuador | 5 | 5 |
| El Salvador | 1 | 1 |
| Guatemala | 1 | 1 |
| Haiti | 1 | 1 |
| Honduras | 1 | 1 |
| Jamaica | 1 | 1 |
| Mexico | 25 | 23 |
| Nicaragua | 1 | 1 |
| Panama | 1 | 1 |
| Paraguay | 1 | 1 |
| Peru | 6 | 6 |
| Surinam | 1 | 1 |
| Uruguay | 1 | 1 |
| Venezuela | 7 | 7 |

[1] Including the University of Puerto Rico School of Medicine.

## RESULTS OF THE SURVEY

Survey results will be presented in this report with particular emphasis on U.S.-born medical students in other countries of the Americas and on foreign medical students in the United States. Additional analysis of data from the survey is expected to be done by PAHO with special attention to students and schools of Latin America. First, a brief overview of the data on medical students in the Western Hemisphere will be given. This will be followed by a more detailed analysis of the data on U.S. citizens as foreign medical students in the Americas. The third section discusses briefly the foreign medical student populations of Mexico, Canada, Brazil, and Argentina. These countries all had comparatively large numbers or percentages of foreign students in their medical schools. Foreign medical students in the United States are then discussed in detail. Finally, the conclusions include recommendations for additional research on foreign medical students.

### Medical Students in the Americas: An Overview

Total enrollment of medical students (native and foreign) in 24 countries of the Western Hemisphere was 209,264, including 7,155 students enrolled in the medical schools of Cuba. Although the medical schools in Cuba did not respond to the questionnaires, total enrollment figures for the Cuban schools were provided by the Cuban Ministry of Health. The total number of medical students in the 23 countires responding to the survey questionnaire was 202,109 (Table 2). Of these students, 9,994 were reported as studying medicine outside their countries of origin, representing almost five percent of all medical students reported.

Sex was reported for 199,875 of the medical students of the Americas; 44,467 (22 percent) were women. Table 3 illustrates that the percentage of women students ranged in the different countries from over 47 percent in the Dominican Republic to almost 11 percent in the United States. Thus, in 1971-72 the United States had a lower percentage of women students in medical school than any other country of the Hemisphere (13). Furthermore, North America had a much smaller percent of female students (11.9 percent) than Latin America (25.6 percent).

Of the 9,983 foreign medical students for whom sex was reported, 8,334 were male and 1,649 were female. As shown in Table 4, over 16 percent of all foreign students were female. Consistent with the high proportion of female medical students in their total medical school enrollments, Venezuela and Uruguay had approximately 40 percent female foreign medical students. On the other hand, the Dominican Republic, which also had a high proportion (47.5 percent) of females in its total enrollment had only 15.6 percent female in its foreign medical student body.

The three countries with the greatest number of foreign students were Mexico, Argentina, and Brazil. The United States was fourth and Canada fifth. Argentina had the largest proportion of foreign students in its medical school enrollments (10 percent). Foreign students were 7.8 percent of the total enrollment in Mexico and

only 2.5 percent of all the medical students in Brazil. Several other countries with relatively smaller numbers of students had high percentages of foreign students, including Costa Rica, Paraguay, Canada, and Uruguay.

Brazil had 73 medical schools surveyed, while Mexico had 23 and Argentina had 9. The United States, with by far the largest number of schools (108), ranked fourth in numbers of foreign students (735), substantially below the top three countries.

Table 2
TOTAL MEDICAL SCHOOL ENROLLMENT AND FOREIGN STUDENT ENROLLMENT IN THE AMERICAS, BY COUNTRY IN WHICH ENROLLED:
1971-72 academic year

| Country in which enrolled | Total students | Foreign students | Percent foreign |
|---|---|---|---|
| Total | 202,109 | 9,994 | 4.9 |
| North America | 49,467 | 1,227 | 2.5 |
| Canada | 5,817 | 492 | 8.5 |
| United States | 43,650 | 735 | 1.7 |
| Latin America | 152,642 | 8,767 | 5.7 |
| Argentina | 29,891 | 3,000 | 10.0 |
| Bolivia | 1,788 | 61 | 3.4 |
| Brazil | 44,074 | 1,104 | 2.5 |
| Colombia | 4,547 | 131 | 2.9 |
| Costa Rica | 282 | 27 | 9.6 |
| Chile | 2,546 | 124 | 4.9 |
| Dominican Republic | 4,078 | 199 | 4.9 |
| Ecuador | 4,638 | 137 | 3.0 |
| El Salvador | 2,179 | 9 | 0.4 |
| Guatemala | 1,830 | 81 | 4.4 |
| Haiti | 532 | 1 | 0.2 |
| Honduras | 761 | 8 | 1.1 |
| Jamaica | 504 | 11 | 3.8 |
| Mexico | 41,675 | 3,231 | 7.8 |
| Nicaragua | 312 | 4 | 2.6 |
| Panama | 147 | 9 | 6.1 |
| Paraguay | 411 | 36 | 8.8 |
| Peru | 3,487 | 37 | 1.1 |
| Surinam | 54 | 0 | 0 |
| Uruguay | 2,674 | 195 | 7.3 |
| Venezuela | 6,232 | 362 | 5.8 |

Table 3

MEDICAL SCHOOL ENROLLMENT IN THE AMERICAS, BY COUNTRY IN WHICH ENROLLED AND SEX

1971-72 academic year

| Country in which enrolled | Both sexes | Male | Female | Percent female |
|---|---|---|---|---|
| Total | 199,875 [1] | 155,408 | 44,467 | 22.2 |
| North America | 49,467 | 43,556 | 5,911 | 11.9 |
| Canada | 5,817 | 4,661 | 1,156 | 19.9 |
| United States [2] | 43,650 | 38,895 | 4,755 | 10.9 |
| Latin America | 150,408 | 111,852 | 38,556 | 25.6 |
| Argentina | 29,891 | 20,967 | 8,924 | 29.8 |
| Bolivia | 1,788 | 1,553 | 235 | 13.1 |
| Brazil | 43,482 | 32,526 | 10,956 | 25.2 |
| Colombia | 4,547 | 3,778 | 769 | 16.9 |
| Costa Rica | 282 | 212 | 70 | 24.8 |
| Chile | 904 | 627 | 277 | 30.6 |
| Dominican Republic | 4,078 | 2,142 | 1,936 | 47.5 |
| Ecuador | 4,638 | 3,806 | 832 | 17.9 |
| El Salvador | 2,179 | 1,557 | 622 | 28.5 |
| Guatemala | 1,830 | 1,626 | 204 | 11.1 |
| Haiti | 532 | 410 | 122 | 22.9 |
| Honduras | 761 | 615 | 146 | 19.2 |
| Jamaica | 504 | 365 | 139 | 27.6 |
| Mexico | 41,675 | 32,941 | 8,734 | 21.0 |
| Nicaragua | 312 | 253 | 59 | 18.9 |
| Panama | 147 | 111 | 36 | 24.5 |
| Paraguay | 411 | 284 | 127 | 30.9 |
| Peru | 3,487 | 2,953 | 534 | 15.3 |
| Surinam | 54 | 48 | 6 | 11.1 |
| Uruguay | 2,674 | 1,413 | 1,261 | 47.2 |
| Venezuela | 6,232 | 3,665 | 2,567 | 41.2 |

[1] Excludes 1,642 students from Chile and 592 students from Brazil for whom sex was not reported.

[2] Includes students from the University of Puerto Rico School of Medicine.

Table 4
NUMBER OF FOREIGN MEDICAL STUDENTS IN THE AMERICAS, BY COUNTRY IN WHICH ENROLLED AND SEX: 1971-72 academic year

| Country in which enrolled | Both sexes | Male | Female | Percent female |
|---|---|---|---|---|
| Total | 9,983 [1] | 8,334 | 1,649 | 16.5 |
| Mexico | 3,231 | 2,899 | 332 | 10.3 |
| Argentina | 3,000 | 2,506 | 494 | 16.5 |
| Brazil | 1,104 | 842 | 262 | 23.7 |
| United States | 735 | 625 | 110 | 15.0 |
| Canada | 492 | 425 | 67 | 13.6 |
| Venezuela | 362 | 216 | 146 | 40.3 |
| Dominican Republic | 199 | 168 | 31 | 15.6 |
| Uruguay | 195 | 118 | 77 | 39.5 |
| Ecuador | 137 | 122 | 15 | 10.9 |
| Colombia | 131 | 100 | 31 | 23.7 |
| Chile | 124 | 84 | 40 | 32.3 |
| Guatemala | 81 | 74 | 7 | 8.6 |
| Bolivia | 61 | 52 | 9 | 14.8 |
| Peru | 37 | 26 | 11 | 29.7 |
| Paraguay | 36 | 26 | 10 | 27.8 |
| Costa Rica | 27 | 24 | 3 | 11.1 |
| Jamaica | 0 | 0 | 0 | 0 |
| El Salvador | 9 | 9 | 0 | 0.0 |
| Panama | 9 | 7 | 2 | 22.2 |
| Honduras | 8 | 6 | 2 | 25.0 |
| Nicaragua | 4 | 4 | 0 | 0.0 |
| Haiti | 1 | 1 | 0 | 0.0 |
| Surinam | 0 | 0 | 0 | 0.0 |

1 Excludes 11 students from Jamaica on whom sex was not reported.

## U.S. Citizens Studying Medicine in Other Countries of the Americas

The results of the survey show that, during the 1971-1972 academic year, 2,045 U.S. citizens were studying in other countries of the Americas, or 20 percent of all foreign medical students in the Americas (Table 5). Of these U.S. citizen students, 117 were reported as female (Table 6). Thus, less than 6 percent of the U.S. medical students studying in other countries of the Americas were women.

There were also 291 students from the Commonwealth of Puerto Rico enrolled in schools outside the Commonwealth and the U.S. mainland (Table 7). Almost all were found in the Dominican Republic (180) and Mexico (104).

Table 5

NUMBER OF TOTAL FOREIGN MEDICAL STUDENTS AND OF U.S. CITIZENS IN THE AMERICAS, BY COUNTRY IN WHICH ENROLLED: 1971-72 academic year

| Country in which enrolled | Total foreign medical students | U.S. citizens | Percent U.S. citizens of total |
|---|---|---|---|
| Total | 9,994 | 2,045 | 20.5 |
| Argentina | 3,000 | 17 | 0.6 |
| Bolivia | 61 | 1 | 1.6 |
| Brazil | 1,104 | 21 | 1.9 |
| Canada | 492 | 102 | 20.7 |
| Colombia | 131 | 12 | 9.2 |
| Costa Rica | 27 | 3 | 11.1 |
| Chile | 124 | 3 | 2.4 |
| Dominican Republic | 199 | 5 | 2.5 |
| Ecuador | 137 | 1 | 0.7 |
| El Salvador | 9 | 0 | 0.0 |
| Guatemala | 81 | 3 | 3.7 |
| Haiti | 1 | 0 | 0.0 |
| Honduras | 8 | 0 | 0.0 |
| Jamaica | 11 | 6 | 54.6 |
| Mexico | 3,231 | 1,853 | 57.4 |
| Nicaragua | 4 | 0 | 0.0 |
| Panama | 9 | 4 | 44.0 |
| Paraguay | 36 | 2 | 5.6 |
| Peru | 37 | 5 | 13.5 |
| United States | 735 | 0 | 0.0 |
| Uruguay | 195 | 0 | 0.0 |
| Venezuela | 362 | 7 | 1.9 |

Table 6
NUMBER OF U.S. CITIZENS IN
MEDICAL SCHOOLS IN THE AMERICAS,
BY COUNTRY IN WHICH ENROLLED AND SEX:
1971-72 academic year

| Country in which enrolled | Both sexes | M. | Female |
|---|---|---|---|
| Total | 2,039 [1] | 1,922 | 117 |
| Argentina | 17 | 11 | 6 |
| Bolivia | 1 | 1 | 0 |
| Brazil | 21 | 14 | 7 |
| Canada | 102 | 97 | 5 |
| Colombia | 12 | 11 | 1 |
| Costa Rica | 3 | 3 | 0 |
| Chile | 3 | 2 | 1 |
| Dominican Republic | 5 | 4 | 1 |
| Ecuador | 1 | 1 | 0 |
| Guatemala | 3 | 3 | 0 |
| Jamaica | 0 | 0 | 0 |
| Mexico | 1,853 | 1,761 | 92 |
| Panama | 4 | 3 | 1 |
| Paraguay | 2 | 1 | 1 |
| Peru | 5 | 5 | 0 |
| Venezuela | 7 | 5 | 2 |

[1] Excludes all medical students from the Commonwealth of Puerto Rico and 6 students in Jamaica for whom sex was not reported.

Table 7
NUMBER OF PUERTO RICAN STUDENTS
IN MEDICAL SCHOOLS IN THE AMERICAS,
BY COUNTRY IN WHICH ENROLLED AND SEX
1971-72 academic year

| Country in which enrolled | Both sexes | Male | Female |
|---|---|---|---|
| Total | 291 | 166 | 125 |
| Colombia | 4 | 0 | 4 |
| Dominican Republic | 180 | 83 | 97 |
| Ecuador | 1 | 0 | 1 |
| Mexico | 104 | 83 | 21 |
| Venezuela | 2 | 0 | 2 |

U.S. citizens (excluding Puerto Ricans) studying medicine in other countries of the Americas were concentrated mainly in Mexico (1,853) with a sizeable contingent in Canada (102). Of the latter, 97 were men and 5 were women. There were 21 U.S. students in the first year classes, 33 in the second year, 26 in the third, and 22 in the fourth (Table 8). McGill University accounted for 75 of the U.S. students in Canada. It is interesting to note that while the majority of foreign medical students at McGill were U.S. citizens, only two of the 92 foreign students at Toronto were from the United States (Table 9).

The U.S.-Canadian joint accreditation system for medical schools is one reason why U.S. citizens are attracted to Canadian schools. Graduates of Canadian medical schools are not considered foreign medical graduates by the Liaison Committee on Medical Education of the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC) because the accreditation mechanism for the Canadian medical schools is the same as that for the medical schools in the United States and Puerto Rico. Canadian and Puerto Rican graduates are not required to obtain certification by the ECFMG. This certificate is required for other foreign graduates in order for them to gain admission into a graduate medical education program in the United States.

## U.S.-born Medical Students in Mexico

Most of the U.S. citizens studying in medical schools in Mexico (1,744) were enrolled by the Autonomous University of Guadalajara. As previously mentioned, students there are classified as regular and irregular, and 126 of the U.S. citizens at Guadalajara were classified as irregular students. Of the remaining 1,618 regular U.S.-born students, 662 were in the first year, 418 in the second, 222 in the third, 161 in the fourth, and 135 in the fifth year internship. A more recent count found some 800 U.S. citizens in the 1972-73 first year class (14).

U.S. citizens are studying in Mexico in large numbers despite the difficulties encountered by students who must study and learn in a second language and adjust to the problems that arise while living in another culture. These students at Guadalajara face a special financial problem as well. The total first year tuition and fee costs at the Autonomous University of Guadalajara for students from North America is $5,000: a $1,000 registration fee and $2,000 per semester tuition. Tuition for the U.S. students is $4,000 per academic year thereafter. The tuition cost for State residents attending publicly supported medical schools in the United States averages $968 per year (15). Thus, these U.S. students are paying tuition costs five or six times higher than if they had studied in publicly-supported medical schools in their home State.

U.S. citizens studying in Mexico have encountered other difficulties. Medical school graduates in Mexico must spend six months (without pay) or one year (with pay) of social service as the last part of their medical school requirement before receiving the medical doctorate degree. One year of internship is also required prior to licensure. This has meant that U.S.-born medical graduates who wish to return to the United States had to spend one and one-half to two years in social service and internship in Mexico before they were eligible to return to the U.S. for graduate medical education.

Table 8
NUMBER OF U.S. CITIZENS IN CANADIAN MEDICAL SCHOOLS,
BY SCHOOL, YEAR OF STUDY, AND SEX
1971-72 academic year

| Medical school | Total | | | Year of study | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | First Year | | | Second Year | | | Third Year | | | Fourth Year | | |
| | Both sexes | Male | Female | Both sexes | Male | Female | Both sexes | Male | Female | Both sexes | Male | Female | Both sexes | Male | Female |
| Total | 102 | 97 | 5 | 21 | 21 | 0 | 33 | 31 | 2 | 26 | 25 | 1 | 22 | 20 | 2 |
| McGill University | 75 | 71 | 4 | 19 | 19 | 0 | 21 | 19 | 2 | 21 | 21 | 0 | 14 | 12 | 2 |
| McMaster University | 8 | 8 | 0 | 2 | 2 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memorial University | 5 | 5 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| Dalhousie University | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 2 | 0 |
| University of British Columbia | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 |
| University of Toronto | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| University of Ottawa | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 |
| University of Calgary | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Queen's University | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |

Table 9
TOTAL MEDICAL SCHOOL ENROLLMENT
AND FOREIGN STUDENT ENROLLMENT
IN CANADA, BY SCHOOL AND NATIONALITY
1971-72 academic year

| Medical school | Total students | Foreign Students | | Total foreign as percent of total students |
|---|---|---|---|---|
| | | Total | United States | |
| Total | 5,817 | 492 | 102 | 8.5 |
| McGill University | 521 | 117 | 75 | 22.5 |
| McMaster University | 129 | 20 | 8 | 15.5 |
| Memorial University | 110 | 14 | 5 | 12.7 |
| Dalhousie University | 372 | 13 | 4 | 3.5 |
| University of British Columbia | 256 | 39 | 3 | 15.2 |
| University of Toronto | 819 | 92 | 2 | 11.2 |
| University of Ottawa | 295 | 31 | 2 | 10.5 |
| University of Calgary | 79 | 2 | 2 | 2.5 |
| Queen's University | 272 | 13 | 1 | 4.8 |
| University of Alberta | 424 | 34 | 0 | 8.0 |
| Laval University | 683 | 0 | 0 | 0.0 |
| University of Manitoba | 303 | 25 | 0 | 8.3 |
| University of Montreal | 762 | 33 | 0 | 4.3 |
| University of Saskatchewan | 218 | 13 | 0 | 6.0 |
| University of Sherbrooke | 229 | 11 | 0 | 4.8 |
| University of Western Ontario | 345 | 35 | 0 | 10.1 |

Recently, however, the AMA has liberalized the requirements for entrance into graduate medical education for U.S.-born FMGs. As of July 1971, U.S.-born foreign medical graduates are being allowed to substitute a year of supervised clinical training under the direction of a medical school approved by the Liaison Committee on Medical Education for the internship or social service required by a foreign school. This is referred to as the "Fifth Pathway" (16). To gain such a position, the student must have completed premedical undergraduate work in an accredited U.S. college or university of a quality high enough for matriculation in a U.S. medical school. He must also have successfully completed all other formal requirements of the foreign school. Finally, he must pass a screening examination acceptable to the Liaison Committee (such as the ECFMG examination). (He need not obtain ECFMG certification, however.) The National Board of Medical Examiners devised a special examination — the American Medical Screening Examination — as such a test. After successful passage through this supervised academic year, the student is eligible to enter an AMA-approved graduate training program. Fourteen U.S. and Canadian medical schools were participating in this program in 1973.

A new Mexican school has initiated a program to attract U.S. citizens. The Faculty of Medicine of the Health Science Institute of the University of Monterrey (UDEM), founded in 1969, accepts U.S. students into its three-phase medical

program. Tuition costs at Monterrey are $1,000 per semester – half the cost at Guadalajara. U.S. students are selected on the basis of a combination of MCAT scores, grade point averages from undergraduate and high school, a test administered by UDEM personnel, and an interview. American applicants with a B.S. degree may begin at the second or third semester level depending on premedical credits earned. It was reported that 60 places were available to U.S. citizens in September 1973 and another 60 places in February 1974 (17). An average of 7 semesters or 3½ years would be required for completion of the UDEM program. Thus, required social service credits (2,400 hours) are earned with the regular course of study.

Graduation requirements of Monterrey include completion of a supervised clinical clerkship in an institution accredited by the Association of American Medical Colleges and by the American Medical Association and return to Monterrey for official commencement exercises. Because of the integrated curriculum structure, completion of at least seven semesters would be necessary for becoming eligible for either the ECFMG or for transfer to a U.S. school through COTRANS; earlier transfer (e.g., after one or two years at Monterrey) would not seem to be feasible. It is entirely possible that the University of Monterrey could, in the next few years, attract and educate as many medical students from the United States as does the Autonomous University of Guadalajara at present.

## Foreign Medical Students in Selected Countries of the Americas

*Mexico* – Mexico had the largest number of foreign students, with 3,231. However, foreign students were less than 8 percent of the total medical student enrollment in Mexico. Of the 3,231 foreign students, just over 10 percent were women, while women comprised 21 percent of the total medical student enrollment (Table 10).

Table 10
TOTAL MEDICAL SCHOOL ENROLLMENT IN MEXICO, BY NATIONALITY AND SEX
1971-72 academic year

| Nationality | Both sexes | Male | Female | Percent female |
|---|---|---|---|---|
| Total | 41,675 | 32,941 | 8,734 | 21.0 |
| Mexico | 38,444 | 30,042 | 8,402 | 21.9 |
| Total foreign | 3,231 | 2,899 | 332 | 10.3 |
| U.S. citizen | 1,853 | 1,761 | 92 | 5.0 |
| Other | 1,378 | 1,138 | 240 | 17.4 |

United States citizens numbered 1,853 in this foreign student group, representing 57.4 percent of the total foreign medical student population of Mexico. Of a total enrollment of 4,949 at the Autonomous University of Guadalajara, 1,744 were U.S. citizens (Table 11), and 913 foreign medical students were of other nationalities. Of the latter, 94 were recorded as Puerto Ricans who, although classified as citizens of the Commonwealth of Puerto Rico, were actually U.S. citizens. Only 3 of the Guadalajara foreign medical students were Canadian citizens.

Table 11
TOTAL MEDICAL SCHOOL ENROLLMENT AT THE AUTONOMOUS UNIVERSITY OF GUADALAJARA, BY NATIONALITY AND SEX
1971-72 academic year

| Nationality | Both sexes | Male | Female | Percent female |
|---|---|---|---|---|
| Total | 4,949 | 4,235 | 714 | 14.4 |
| Mexico | 2,292 | 1,813 | 479 | 20.9 |
| Foreign | 2,657 | 2,420 | 237 | 8.9 |
| U.S. citizen | 1,744 | 1,665 | 79 | 4.5 |
| Other[1] | 913 | 755 | 158 | 17.3 |

1 Includes 94 students from the Commonwealth of Puerto Rico who are U.S. citizens.

Almost 21 percent of the Mexican citizen medical students at the Autonomous University of Guadalajara were female (Table 12). This is consistent with the percentage of women for all of Mexico. The proportion of the U.S.-born foreign students who were female was only 4.5 percent while a much larger percentage (17.3) of all other foreign medical students were female.

Table 12
NUMBER OF FOREIGN MEDICAL STUDENTS IN ARGENTINIAN MEDICAL SCHOOLS, BY WORLD REGION OF ORIGIN
1971-72 academic year

| Region of origin | Number | Percent distribution |
|---|---|---|
| Total | 3,000 | 100.0 |
| Americas | 2,123 | 70.8 |
| Europe | 809 | 26.9 |
| All other regions | 68 | 2.3 |

*Argentina* – Argentina ranked second in total number of foreign students, but had the highest percentage (10 percent) of foreign students of all the countries of the Americas. These foreign students in Argentina came from 53 countries of the world. Most of the 3,000 foreign students in Argentina (over 70 percent) were from other countries of the Americas, with 2,105 from Latin America, 17 from the U.S., and 1 from Canada (Table 12). There were also 809 foreign medical students from Europe, including 485 from Italy and 181 from Spain.

Female students were 16 percent of the foreign student population, although females made up almost 30 percent of all medical students in Argentina (Table 13).

In Argentina, the medical school with the largest foreign student enrollment was the National University of La Plata, with 1,304. Of these foreign students, 1,008 (77 percent) were from the Americas and 208 were from Europe. The second largest foreign enrollment (543 students) was at the medical school of the National University of Buenos Aires. In contrast with La Plata, 380 (70 percent) of the foreign students at Buenos Aires were from Europe.

Table 13
TOTAL MEDICAL SCHOOL ENROLLMENT
IN ARGENTINIAN MEDICAL SCHOOLS,
BY NATIONALITY AND SEX
1971-72 academic year

| Nationality | Both sexes | Male | Female | Percent female |
|---|---|---|---|---|
| Total | 32,891 | 23,473 | 9,418 | 28.6 |
| Argentinian | 29,891 | 20,967 | 8,924 | 29.8 |
| Foreign | 3,000 | 2,506 | 494 | 16.4 |

*Brazil* – Brazil has more medical schools by far than any other Latin American country. A total of 44,074 students were enrolled in those schools in the 1971-72 academic year. Of that number, 1,104 (2.5 percent) were citizens of foreign countries. These foreign students were enrolled in 57 of the 73 Brazilian schools surveyed.

It is interesting to note that a major portion (502) of the foreign students in Brazil came from Europe (Table 14). As could be expected, about one-half (214) of these European foreign students came from Portugal. The only other European country represented by a substantial number of foreign students in Brazil was Italy, with 110. Of the 410 foreign students from other Latin American countries, 134 were from nearby Bolivia. Paraguay had 55 students, Panama had 50, and the rest came in smaller numbers from 14 other Latin American countries. Most of the foreign students from Asia and the Middle East were from Lebanon (35), Egypt (30), Israel (29), Korea (26), and China (25). Each of these countries of the Eastern Hemisphere had more medical students in Brazil than did the United States, with 21.

Table 14
NUMBER OF FOREIGN MEDICAL STUDENTS
IN BRAZILIAN MEDICAL SCHOOLS,
BY WORLD REGION OF ORIGIN
1971-72 academic year

| Region of origin | Number | Percent distribution |
|---|---|---|
| Total | 1,102 | 100.0 |
| Europe | 502 | 45.6 |
| Latin America | 410 | 37.2 |
| Asia, Africa, and Middle East | 169 | 15.3 |
| United States | 21 | 1.9 |

*Canada* – Of the 5,817 medical students in Canada, 492 (8.5 percent) were non-Canadian. Thus, although Canada ranked fifth in total numbers of foreign studies, it was third highest in percentage. The non-Canadians represented 36 foreign countries.

As shown in Table 5, U.S. citizens comprised 102 (over 20 percent) of these foreign students. It was not possible to identify the country of citizenship of 230 foreign students who were classified as landed immigrants. (*Non-Canadian landed immigrant* is a visa classification equivalent to the United States permanent visa category.) An unknown number of these landed immigrants may be U.S. citizens who applied for Canadian citizenship status.

Of the foreign students in Canada, 45 were from Hong Kong and 16 listed Malaysia as their homeland. Trinidad, Ghana, and Singapore had 11 students each, and England had 8. The other countries represented had fewer than 8 students each.

McGill University had over one-fifth of all the foreign medical students in Canada with 117. The University of Toronto was second in number of foreign medical students with 92 (Table 9).

## Foreign Medical Students in the United States

*Region of Origin* – Table 15 shows, by region of origin in the world, the enrollment of 735 foreign medical students in the United States. These students come from 91 countries, the largest group (31 percent) from Latin America. The Caribbean is the area of origin for most students from Latin America; Cuba, Jamaica, and other islands of the West Indies account for all but 53 (or approximately 75 percent) of the Latin American medical students in the United States (Table 16). Another 24 percent of the foreign students were from Asia. China, Formosa, and Hong Kong were the countries of origin for 83 percent of the Asian medical students. European students made up 18 percent of the foreign medical students in the United States, and 13 percent were from Africa. Canada (7 percent), the Middle East (3 percent), and Oceania (1 percent) accounted for the remainder of the foreign medical students.

Table 15
NUMBER OF FOREIGN MEDICAL STUDENTS IN U.S. MEDICAL SCHOOLS, BY WORLD REGION OF ORIGIN AND SEX:
1971-72 academic year

| Region of origin | Number | Percent distribution | Female | Percent female |
|---|---|---|---|---|
| Total | 735 | 100.0 | 110 | 15.0 |
| Latin America | 226 | 30.7 | 28 | 12.4 |
| Asia | 179 | 24.4 | 31 | 17.3 |
| Europe | 135 | 18.4 | 32 | 23.7 |
| Africa | 97 | 13.2 | 5 | 5.2 |
| Canada | 50 | 6.8 | 13 | 26.0 |
| Middle East [1] | 40 | 5.4 | 1 | 2.5 |
| Oceania | 8 | 1.1 | 0 | 0 |

[1] Includes Afghanistan, Bahrain, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Pakistan, Saudi Arabia, Syria, Turkey, and Yemen.
[2] Includes Australia and New Zealand.

Table 16
NUMBER OF FOREIGN STUDENTS IN U.S. MEDICAL SCHOOLS, FROM SELECTED COUNTRY OF ORIGIN AND SEX:
1971-72 academic year

| Country of origin | Both sexes | Male | Female |
|---|---|---|---|
| Latin America: | | | |
| Cuba | 64 | 60 | 4 |
| Jamaica | 49 | 40 | 9 |
| Other West Indies | 60 | 51 | 9 |
| South America | 33 | 31 | 2 |
| Central America | 20 | 16 | 4 |
| Asia: | | | |
| China [1] | 55 | 44 | 11 |
| Formosa | 3 | 3 | 0 |
| Hong Kong | 51 | 44 | 7 |
| Philippines | 6 | 5 | 1 |
| India | 6 | 4 | 2 |
| Japan | 6 | 5 | 1 |

1 The country of origin was given simply as "China." In many cases, they are residents of countries other than the Republic of China. There was no exchange between the United States and the People's Republic of China at the time the survey was made.

The distribution of foreign medical students in the United States by region of origin can be compared to the distribution of all foreign students in this country (Table 17) as reported by the IIE. According to the IIE 1971-72 survey, 37 percent of all foreign students were from Asia (Far East); 21 percent from Latin America; 12 percent from the Middle East (Near and Middle); 12 percent from Europe; 8 percent from Canada; 7 percent from Africa; and 2 percent from Oceania (18, p. 4).

As shown in Table 17, the percentages of foreign students studying medicine from Latin America, Africa, and Europe are considerably higher than the percentages of the total foreign students from those areas of the world. On the other hand, there are smaller percentages of foreign medical students from Asia and the Middle East than the percentages from those countries in the total foreign student body. Canada and Oceania maintain approximately the same ratio.

Table 17
DISTRIBUTION OF TOTAL FOREIGN STUDENTS AND OF FOREIGN MEDICAL STUDENTS IN THE UNITED STATES, BY REGION OF ORIGIN
1971-72 academic year

| Region of origin | Percentage Distribution | |
|---|---|---|
| | Total foreign students | Foreign medical students |
| Number of students | 140,126 | 735 |
| Percent distribution | | |
| Total | 100.0% | 100.0% |
| Latin America | 21 | 30.7 |
| Asia | 37 | 24.4 |
| Europe | 12 | 18.4 |
| Africa | 7 | 13.2 |
| Canada | 8 | 6.8 |
| Middle East | 12 | 5.4 |
| Oceania | 2 | 1.1 |

Source: Total foreign students from Institute of International Education, *Open Doors 1972*: Report on International Exchange, New York, The Institute, 1972.

*Sex and Year of Study* – While 11 percent of all medical students in the United States were women, 15 percent of the foreign medical students in the U.S. were women (Table 18). This contrasts with some Latin American countries where the ratio of females in the foreign student body is much smaller than the ratio of all females to the entire student body. Thus, the influx of foreign medical students to the United States increases the proportion of women in the student body, whereas in Mexico and Argentina, foreign students decrease the proportion of women.

Over 80 percent of the women foreign medical students in the United States were from Latin America, Asia, and Europe. Approximately 25 percent of the Canadian and European foreign medical students in the United States were women. On the other hand, only 5 percent or less of those from Africa and the Middle East were women.

Table 18
NUMBER OF FOREIGN MEDICAL STUDENTS IN U.S. MEDICAL SCHOOLS, BY YEAR OF STUDY AND SEX
1971-72 academic year

| Year of study | Number of students | | | Percent female |
|---|---|---|---|---|
| | Both sexes | Male | Female | |
| Total | 735 | 625 | 110 | 15.0 |
| First | 239 | 197 | 42 | 17.6 |
| Second | 220 | 187 | 33 | 15.0 |
| Third | 154 | 134 | 20 | 13.0 |
| Fourth | 122 | 107 | 15 | 12.3 |

Of the 735 foreign medical students, 238 were in the first year class, 220 in the second, 154 in the third, and 123 were in the fourth (Table 19). It is interesting to note that 17 percent of the foreign students in the first year class were women, while in the total enrollment in the first year, women made up only 13 percent of the class.

Table 19
NUMBER OF FOREIGN STUDENTS IN U.S. MEDICAL SCHOOLS, BY SCHOOL AND YEAR OF STUDY
1971-72 academic year

| State and medical school [1] | Total foreign students | Year of study | | | |
|---|---|---|---|---|---|
| | | First | Second | Third | Fourth |
| All schools | 735 | 239 | 220 | 154 | 122 |
| Arizona | | | | | |
| University of Arizona | 2 | 0 | 1 | 1 | 0 |
| Arkansas | | | | | |
| University of Arkansas | 1 | 0 | 0 | 0 | 1 |
| California | | | | | |
| University of California, Davis | 3 | 0 | 1 | 2 | 0 |
| University of California, Irvine | 1 | 0 | 1 | 0 | 0 |
| University of California, Los Angeles | 14 | 7 | 3 | 3 | 1 |
| University of California, San Diego | 5 | 0 | 3 | 2 | 0 |
| University of California San Francisco | 14 | 4 | 5 | 3 | 2 |

Table 19 (Continued)
NUMBER OF FOREIGN STUDENTS IN U.S. MEDICAL SCHOOLS, BY SCHOOL AND YEAR OF STUDY: 1971-72 academic year

| State and medical school [1] | Total foreign students | Year of Study | | | |
|---|---|---|---|---|---|
| | | First | Second | Third | Fourth |
| Loma Linda University | 39 | 11 | 13 | 6 | 9 |
| University of Southern California | 18 | 6 | 5 | 3 | 4 |
| Stanford University | 9 | 3 | 2 | 2 | 2 |
| Colorado | | | | | |
| University of Colorado | 6 | 0 | 3 | 1 | 2 |
| Connecticut | | | | | |
| University of Connecticut | 2 | 1 | 1 | 0 | 0 |
| Yale University | 8 | 2 | 3 | 3 | 0 |
| District of Columbia | | | | | |
| Georgetown University | 8 | 3 | 4 | 1 | 0 |
| George Washington University | 14 | 5 | 2 | 4 | 3 |
| Howard University | 84 | 23 | 34 | 10 | 17 |
| Florida | | | | | |
| University of Florida | 5 | 0 | 3 | 2 | 0 |
| University of Miami | 28 | 8 | 8 | 2 | 10 |
| Georgia | | | | | |
| Emory University | 5 | 2 | 2 | 0 | 1 |
| Medical College of Georgia | 3 | 0 | 0 | 0 | 3 |
| Hawaii | | | | | |
| University of Hawaii | 20 | 12 | 6 | 2 | 0 |
| Illinois | | | | | |
| Chicago Medical School | 2 | 0 | 1 | 1 | 0 |
| University of Chicago | 7 | 1 | 3 | 3 | 0 |
| University of Illinois | 8 | 3 | 1 | 2 | 2 |
| Stritch School of Medicine (Loyola University) | 4 | 0 | 1 | 3 | 0 |
| Northwestern University | 15 | 4 | 4 | 7 | 0 |
| Indiana | | | | | |
| Indiana University | 10 | 4 | 2 | 1 | 3 |
| Iowa | | | | | |
| University of Iowa | 4 | 2 | 0 | 1 | 1 |
| Kansas | | | | | |
| University of Kansas | 1 | 0 | 0 | 0 | 1 |
| Kentucky | | | | | |
| University of Kentucky | 1 | 0 | 0 | 1 | 0 |
| University of Louisville | 3 | 2 | 1 | 0 | 0 |
| Louisiana | | | | | |
| Louisiana State University, New Orleans | 4 | 0 | 1 | 2 | 1 |
| Tulane University | 9 | 3 | 1 | 4 | 1 |
| Maryland | | | | | |
| Johns Hopkins University | 10 | 1 | 4 | 2 | 3 |
| University of Maryland | 5 | 0 | 4 | 1 | 0 |

(Continued)

Table 19 (Continued)
NUMBER OF FOREIGN STUDENTS IN U.S. MEDICAL SCHOOLS, BY SCHOOL AND YEAR OF STUDY: 1971-72 academic year

| State and medical school [1] | Total foreign students | Year of Study | | | |
|---|---|---|---|---|---|
| | | First | Second | Third | Fourth |
| Massachusetts | | | | | |
| Boston University | 3 | 1 | 0 | 1 | 1 |
| Harvard Medical School | 14 | 8 | 1 | 2 | 3 |
| Tufts University | 2 | 0 | 1 | 0 | 1 |
| Michigan | | | | | |
| University of Michigan | 5 | 2 | 1 | 1 | 1 |
| Michigan State University | 2 | 1 | 1 | 0 | 0 |
| Wayne State University | 9 | 3 | 3 | 3 | 0 |
| Minnesota | | | | | |
| University of Minnesota, Minneapolis | 7 | 2 | 3 | 0 | 2 |
| Missouri | | | | | |
| University of Missouri, Columbia | 2 | 0 | 0 | 1 | 1 |
| St. Louis University | 11 | 2 | 2 | 3 | 4 |
| Washington University | 8 | 2 | 2 | 2 | 2 |
| Nebraska | | | | | |
| Creighton University | 7 | 2 | 3 | 2 | 0 |
| University of Nebraska | 7 | 3 | 3 | 0 | 1 |
| New Hampshire | | | | | |
| Dartmouth Medical School | 3 | 1 | 2 | 0 | 0 |
| New Jersey | | | | | |
| College of Medicine and Dentistry (Newark) | 4 | 0 | 1 | 1 | 2 |
| Rutgers Medical School | 6 | 3 | 3 | 0 | 0 |
| New Mexico | | | | | |
| University of New Mexico | 2 | 1 | 0 | 1 | 0 |
| New York | | | | | |
| Albany Medical College | 3 | 0 | 0 | 2 | 1 |
| Columbia University | 14 | 10 | 1 | 3 | 0 |
| Cornell University | 6 | 1 | 5 | 0 | 0 |
| Albert Einstein College | 27 | 10 | 7 | 7 | 3 |
| Mount Sinai | 6 | 2 | 0 | 4 | 0 |
| New York University | 9 | 2 | 2 | 5 | 0 |
| University of Rochester | 3 | 1 | 2 | 0 | 0 |
| SUNY, Buffalo | 17 | 4 | 6 | 6 | 1 |
| SUNY, Downstate (Brooklyn) | 34 | 14 | 8 | 6 | 6 |
| SUNY, Stony Brook | 1 | 1 | 0 | 0 | 0 |
| SUNY, Upstate (Syracuse) | 9 | 2 | 4 | 2 | 1 |
| North Carolina | | | | | |
| Bowman Gray | 1 | 0 | 0 | 0 | 1 |
| Duke University | 4 | 1 | 0 | 2 | 1 |
| University of North Carolina | 4 | 1 | 2 | 1 | 0 |

(Continued)

Table 19 (Continued)
NUMBER OF FOREIGN STUDENTS IN U.S. MEDICAL SCHOOLS, BY SCHOOL AND YEAR OF STUDY: 1971-72 academic year

| State and medical school [1] | Total foreign students | Year of Study | | | |
|---|---|---|---|---|---|
| | | First | Second | Third | Fourth |
| Ohio | | | | | |
| Case Western Reserve | 11 | 6 | 3 | 2 | 0 |
| University of Cincinnati | 5 | 3 | 1 | 0 | 1 |
| Medical College of Ohio at Toledo | 1 | 0 | 0 | 1 | 0 |
| Oklahoma | | | | | |
| University of Oklahoma | 7 | 2 | 1 | 1 | 3 |
| Oregon | | | | | |
| University of Oregon | 2 | 1 | 0 | 0 | 1 |
| Pennsylvania | | | | | |
| Hahnemann Medical College and Hospital | 4 | 3 | 1 | 0 | 0 |
| Jefferson Medical College | 3 | 0 | 1 | 1 | 1 |
| University of Pennsylvania | 13 | 6 | 4 | 3 | 0 |
| Pennsylvania State University | 2 | 1 | 1 | 0 | 0 |
| University of Pittsburgh | 3 | 2 | 1 | 0 | 0 |
| Temple University | 9 | 1 | 4 | 3 | 1 |
| Medical College of Pennsylvania | 3 | 1 | 2 | 0 | 0 |
| Rhode Island | | | | | |
| Brown University | 2 | 0 | 2 | 0 | 0 |
| Tennessee | | | | | |
| Meharry Medical College | 15 | 5 | 3 | 4 | 3 |
| University of Tennessee | 3 | 1 | 1 | 0 | 1 |
| Vanderbilt University | 4 | 2 | 0 | 1 | 1 |
| Texas | | | | | |
| Baylor College of Medicine | 4 | 0 | 3 | 0 | 1 |
| University of Texas, Galveston | 7 | 2 | 1 | 1 | 3 |
| University of Texas, San Antonio | 1 | 0 | 0 | 0 | 1 |
| University of Texas Southwestern | 3 | 2 | 1 | 0 | 0 |
| Vermont | | | | | |
| University of Vermont | 1 | 0 | 0 | 0 | 1 |
| Virginia | | | | | |
| Medical College of Virginia | 2 | 2 | 0 | 0 | 0 |
| Washington | | | | | |
| University of Washington | 8 | 3 | 2 | 2 | 1 |
| Wisconsin | | | | | |
| Medical College of Wisconsin | 11 | 3 | 2 | 3 | 3 |
| University of Wisconsin | 3 | 3 | 0 | 0 | 0 |
| Puerto Rico | | | | | |
| University of Puerto Rico | 6 | 3 | 0 | 2 | 1 |

1. Only schools with 1 or more foreign medical students are shown in table.

*Foreign Students at Selected Medical Schools* – Taking all schools in each State, three States had enrolled over 100 foreign medical students in 1971-72: the District of Columbia, California, and New York, accounting for 7.0, 3.4, and 2.5 percent, respectively, of their total medical school enrollment. As noted below, Hawaii's foreign contingent comprised 17 percent of her total medical school enrollment, and Florida's enrollment included 4.3 percent foreign students (the bulk of them at the University of Miami).

Certain schools, for a variety of traditional or geographic reasons, have enrolled foreign students in relatively high numbers (Table 20). Howard University, a Federally-founded predominantly Black university located in the District of Columbia, had by far the largest number (84) of foreign medical students, representing 19.5 percent of the student body. Foreign medical students enrolled at Howard made up 11 percent of all foreign medical students in the United States. This large number of foreign medical students is consistent with the high percentage of all foreign students (21 percent in 1971-72) in the total student body at Howard. Most of the Howard foreign medical students (51) came from the Caribbean Islands (excluding Cuba) and Guyana. Of the rest, 25 were African, 7 were listed as citizens of the United Kingdom, and 1 was Vietnamese. Howard University opened its doors to Black foreign students from the Caribbean and the countries of Africa when those nations had no medical schools, and, over the years, it has continued to accept students from those countries.

The four medical schools (Buffalo, Downstate, Stony Brook, and Upstate) of the State University of New York (SUNY) had a total of 61 foreign medical students. The Downstate campus (Brooklyn) enrolled 34 of these students or about 4 percent of the total enrollment. Foreign medical students in the SUNY system were distributed as follows: Asia, 10; Europe, 15; Latin America, 13; Africa, 7; Middle East, 6; and Canada, 2.

Loma Linda University, a Seventh-Day Adventist Church institution in California, had 39 foreign students (8 percent of the student body). Sixteen of the Loma Linda students were from Asia, nine came from Canada. The Seventh-Day Adventist Church has a particular interest in international health, supplying teachers and financial aid to medical schools in developing countries. It also encourages foreign medical students who are of the same religion or who hold similar religious beliefs to attend Loma Linda.

The University of Miami ranked fourth in the number of foreign medical students enrolled, with 28 students, almost 6 percent of the total student body. The great majority were from Cuba. Many of those students reportedly of Cuban nationality may be children of refugees from Cuba who are now reaching college age. Another New York school, Albert Einstein, enrolled 27 foreign students in 1971-72 (over 5 percent of the student body), of whom 10 each were from Latin America and Europe, 3 from Africa, and 2 each from the Middle East and Canada. Finally, the University of Hawaii, which in 1971-72 had only three classes enrolled, showed a total of 20 foreign students, or 17 percent of its student body. As might be expected from Hawaii's location, the greatest number (17) were from Asia.

Table 20
TOTAL MEDICAL SCHOOL ENROLLMENT
AND FOREIGN STUDENT ENROLLMENT IN
U.S. MEDICAL SCHOOLS,
BY MEDICAL SCHOOL
1971-72 academic year

| State and medical school | Total students | Foreign students | Percent foreign |
|---|---|---|---|
| All schools | 43,650 | 735 | 1.7 |
| Alabama | | | |
| University of Alabama | 411 | 0 | 0 |
| Arizona | | | |
| University of Arizona | 224 | 2 | 9 |
| Arkansas | | | |
| University of Arkansas | 417 | 1 | 2 |
| California | | | |
| University of California, Davis | 248 | 3 | 1.2 |
| University of California, Irvine | 258 | 1 | 4 |
| University of California, Los Angeles | 541 | 14 | 2.6 |
| University of California, San Diego | 205 | 5 | 2.4 |
| University of California, San Francisco | 535 | 14 | 2.6 |
| Loma Linda University | 484 | 39 | 8.1 |
| University of Southern California | 364 | 18 | 5.0 |
| Stanford University | 355 | 9 | 2.5 |
| Colorado | | | |
| University of Colorado | 474 | 6 | 1.3 |
| Connecticut | | | |
| University of Connecticut | 126 | 2 | 1.6 |
| Yale University | 377 | 8 | 2.1 |
| District of Columbia | | | |
| Georgetown University | 621 | 8 | 1.3 |
| George Washington University | 467 | 14 | 3.0 |
| Howard University | 431 | 84 | 19.5 |
| Florida | | | |
| University of Florida | 267 | 5 | 1.9 |
| University of Miami | 479 | 28 | 5.9 |
| University of South Florida | 24 | 0 | 0 |
| Georgia | | | |
| Emory University | 353 | 5 | 1.4 |
| Medical College of Georgia | 501 | 3 | .6 |
| Hawaii | | | |
| University of Hawaii | 118 | 20 | 17.0 |
| Illinois | | | |
| Chicago Medical School | 326 | 2 | .6 |
| University of Chicago | 375 | 7 | 1.9 |

(Continued)

Table 20 (Continued)
TOTAL MEDICAL SCHOOL ENROLLMENT
AND FOREIGN STUDENT ENROLLMENT IN
U.S. MEDICAL SCHOOLS,
BY MEDICAL SCHOOL
1971-72 academic year

| Medical school | Total students | Foreign students | Percent foreign |
|---|---|---|---|
| University of Illinois | 905 | 8 | .9 |
| Stritch School of Medicine (Loyola University) | 458 | 4 | .9 |
| Northwestern University | 611 | 15 | 2.5 |
| Rush Medical College | 99 | 0 | 0 |
| Indiana | | | |
| Indiana University | 969 | 10 | 1.0 |
| Iowa | | | |
| University of Iowa | 596 | 4 | .7 |
| Kansas | | | |
| University of Kansas | 525 | 1 | .2 |
| Kentucky | | | |
| University of Kentucky | 366 | 1 | .3 |
| University of Louisville | 431 | 3 | .7 |
| Louisiana | | | |
| Louisiana State University, New Orleans | 569 | 4 | .7 |
| Louisiana State University, Shreveport | 108 | 0 | 0 |
| Tulane University | 548 | 9 | 1.6 |
| Maryland | | | |
| Johns Hopkins University | 427 | 10 | 2.3 |
| University of Maryland | 564 | 5 | 0.9 |
| Massachusetts | | | |
| Boston University | 396 | 3 | .8 |
| Harvard Medical School | 640 | 14 | 2.2 |
| University of Massachusetts | 40 | 0 | 0 |
| Tufts University | 540 | 2 | .4 |
| Michigan | | | |
| University of Michigan | 882 | 5 | .6 |
| Michigan State University | 195 | 2 | 1.0 |
| Wayne State University | 634 | 9 | 1.4 |
| Minnesota | | | |
| University of Minnesota, Minneapolis | 830 | 7 | .8 |
| Mississippi | | | |
| University of Mississippi | 369 | 0 | 0 |
| Missouri | | | |
| University of Missouri, Columbia | 414 | 2 | .5 |
| University of Missouri, Kansas City | 36 | 0 | 0 |
| St. Louis University | 543 | 11 | 2.0 |
| Washington University St. Louis | 429 | 8 | 1.9 |
| Nebraska | | | |
| Creighton University | 343 | 7 | 2.0 |
| University of Nebraska | 472 | 7 | 1.5 |

(Continued)

Table 20 (Continued)
TOTAL MEDICAL SCHOOL ENROLLMENT
AND FOREIGN STUDENT ENROLLMENT IN
U.S. MEDICAL SCHOOLS,
BY MEDICAL SCHOOL:
1971-72 academic year

| Medical school | Total students | Foreign students | Percent foreign |
|---|---|---|---|
| Nevada | | | |
| University of Nevada | 32 | 0 | 0 |
| New Hampshire | | | |
| Dartmouth Medical School | 115 | 3 | 2.6 |
| New Jersey | | | |
| College of Medicine and Dentistry (Newark) | 393 | 4 | 1.0 |
| Rutgers Medical School | 161 | 6 | 3.7 |
| New Mexico | | | |
| University of New Mexico | 191 | 2 | 1.1 |
| New York | | | |
| Albany Medical College | 319 | 3 | .9 |
| Columbia University | 540 | 14 | 2.6 |
| Cornell University | 365 | 6 | 1.6 |
| Albert Einstein College | 485 | 27 | 5.6 |
| Mount Sinai | 178 | 6 | 3.4 |
| New York Medical College | 548 | 0 | 0 |
| New York University | 572 | 9 | 1.6 |
| University of Rochester | 336 | 3 | .9 |
| SUNY, Buffalo | 488 | 17 | 3.5 |
| SUNY, Downstate (Brooklyn) | 809 | 34 | 4.2 |
| SUNY, Stony Brook | 25 | 1 | 4.0 |
| SUNY, Upstate (Syracuse) | 423 | 9 | 2.1 |
| North Carolina | | | |
| Bowman Gray | 291 | 1 | .3 |
| Duke University | 412 | 4 | 1.0 |
| University of North Carolina | 366 | 4 | 1.1 |
| North Dakota | | | |
| University of North Dakota | 112 | 0 | 0 |
| Ohio | | | |
| Case Western Reserve | 403 | 11 | 2.7 |
| University of Cincinnati | 449 | 5 | 1.1 |
| Medical College of Ohio at Toledo | 113 | 1 | .9 |
| Ohio State University | 764 | 0 | 0 |
| Oklahoma | | | |
| University of Oklahoma | 494 | 7 | 1.4 |
| Oregon | | | |
| University of Oregon | 379 | 2 | .5 |
| Pennsylvania | | | |
| Hahnemann Medical College and Hospital | 484 | 4 | .8 |
| Jefferson Medical College | 810 | 3 | .4 |
| University of Pennsylvania | 603 | 13 | 2.2 |
| Pennsylvania State University | 244 | 2 | .8 |
| University of Pittsburgh | 465 | 3 | .7 |
| Temple University | 618 | 9 | 1.5 |
| Medical College of Pennsylvania | 309 | 3 | 1.0 |

(Continued)

Table 20 (Continued)
TOTAL MEDICAL SCHOOL ENROLLMENT
AND FOREIGN STUDENT ENROLLMENT IN
U.S. MEDICAL SCHOOLS,
BY MEDICAL SCHOOL:
1971-72 academic year

| Medical school | Total students | Foreign students | Percent foreign |
|---|---|---|---|
| Rhode Island | | | |
| Brown University | 55 | 2 | 3.6 |
| South Carolina | | | |
| Medical University of South Carolina | 490 | 0 | 0 |
| South Dakota | | | |
| University of South Dakota | 110 | 0 | 0 |
| Tennessee | | | |
| Meharry Medical College | 354 | 15 | 4.2 |
| University of Tennessee | 672 | 3 | .5 |
| Vanderbilt University | 281 | 4 | 1.4 |
| Texas | | | |
| Baylor College of Medicine | 464 | 4 | .9 |
| University of Texas, Galveston | 656 | 7 | 1.1 |
| University of Texas, Houston | 51 | 0 | 0 |
| University of Texas, San Antonio | 381 | 1 | .3 |
| University of Texas, Southwestern | 440 | 3 | .7 |
| Utah | | | |
| University of Utah | 310 | 0 | 0 |
| Vermont | | | |
| University of Vermont | 295 | 1 | .3 |
| Virginia | | | |
| Medical College of Virginia | 521 | 2 | .4 |
| University of Virginia | 389 | 0 | 0 |
| Washington | | | |
| University of Washington | 413 | 8 | 1.9 |
| West Virginia | | | |
| West Virginia University | 295 | 0 | 0 |
| Wisconsin | | | |
| Medical College of Wisconsin | 3 | 11 | 2.6 |
| University of Wisconsin | 460 | 3 | .7 |
| Puerto Rico | | | |
| University of Puerto Rico | 366 | 6 | 1.6 |

Source: Total medical school enrollment from *Journal of the American Medical Association* 222 966-968, 1972.

## FUTURE RESEARCH

The response rate for this pilot study of *Foreign Medical Students in the Americas: 1971-72* was excellent and no major problems were encountered. It was decided, therefore, that the project could be expanded in an attempt to collect such information worldwide. The Office of Statistics of UNESCO agreed to undertake a survey of the medical schools listed in the World Health Organization *World Directory of Medical Schools 1970*. This study will be an extension of the planned UNESCO survey of foreign students at institutions of higher education. The numbers of medical students (domestic and foreign) by country of origin, year of study, and sex will be reported for the 1971-72 and 1972-73 academic years.

This worldwide survey is being conducted for the Office of International Health Manpower Studies/Bureau of Health Resources Development/Department of Health, Education, and Welfare (OIHMS/BHRD/DHEW) of the U.S. under the terms of an international agreement. A special questionnaire, incorporating improvements in the survey instrument used in this study, has been designed. It will be printed in four languages: English, French, German, and Spanish.

The questionnaire will be mailed to the medical schools listed in the WHO directory, as indicated above, during November 1973. Qualified consultants will assist in any necessary follow-up visits to nonrespondent schools where large numbers of U.S. citizens are known to be studying. Schools in eight European countries have been specified as institutions where a site visit follow-up will be mandatory if telephone and telegram reminders produce no response. One school in the Philippines will also be visited if it is a nonrespondent. The Pan American Health Organization is collaborating in the project for collection of additional data in the Americas. The final report for the worldwide survey is scheduled for completion by the end of 1974.

The end product of the worldwide survey – an improved count of the foreign students studying medicine – is the first step in the development of an adequate data base on U.S.-born foreign medical students. In addition, data on characteristics of the foreign students, such as age, marital status, home state, racial or ethnic origin, academic background, and performance are needed. Further information is needed about how these students finance their education, what their career goals are, and how they adjust to the language, cultural, social, and housing problems which they face.

Some preliminary investigation has been made of students who transfer from foreign schools to U.S. schools. With the increasing number of transfers under the COTRANS system, additional study should be undertaken on the academic performance of these transfers in comparison with U.S. medical students who study in a U.S. school for the full four-year program.

Although U.S. citizens who study abroad are a small portion of all the FMGs (just over 9 percent in 1970) and an even smaller portion of all physicians (not quite 2 percent in 1970) in this country, it is important to expand our understanding of this subpopulation of potential U.S. physicians and contribute to

the development of an adequate data base for health planning in the United States. More importantly, in order to answer questions raised about the appropriateness and relevance of medical training abroad for U.S. practice, evaluative studies of the performance of these foreign-trained physicians in comparison with physicians trained in the United States are required.

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